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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

4590-489

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Signature _____

Typed or printed name _____

Application Number

10/573,410

Filed

March 27, 2006

First Named Inventor

Elias BITAR

Art Unit

3663

Examiner

Dager, Jonathan M.

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

Kenneth M. Berner

Signature

Kenneth M. Berner

Typed or printed name

703-684-1111

Telephone number

December 23, 2008

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

*Total of _____ forms are submitted.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Elias BITAR et al.

Confirmation No. 2960

U.S. Patent Application No. 10/573,410

Group Art Unit: 3663

Filed: March 27, 2006

Examiner: Dager, Jonathan M.

For: DISTANCE-ESTIMATION METHOD FOR A TRAVELLING OBJECT SUBJECTED TO DYNAMIC PATH CONSTRAINTS

PRE APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

It is respectfully submitted that the rejections advanced in the Final Office Action dated July 23, 2008 should be reversed.

Claims 1-11 remain pending in the application and stand as they were rejected

The subject matter claimed in claim 1 relates to:

A method for estimating the distances from a mobile, to the points of a map of a terrain over which the mobile is moving; said mobile being subjected to dynamic constraints prohibiting it from certain zones of the map, referred to as prohibited zones of passage, whose configuration varies as a function of the time of travel of the mobile; said map being extracted from a terrain elevation database, encompassing a set of points labeled by an altitude, a latitude and a longitude meshing the terrain of deployment of the mobile;

This method implements a distance transformation, used in the technical domain of image processing, over the image constituted by the elements of the terrain database for estimating the distances of various point of the image with respect to a source point placed in

proximity to the mobile.

said method implementing a distance transform operating by propagation over the image constituted by the elements of the terrain elevation database corresponding to the map and arranged in rows and columns in orders of values of longitude and latitude the distance transform estimating the distances of the various points of the image with respect to a source point placed in proximity to the mobile,

As usual, in an image, this distance transformation estimates the distance of a goal point to the source point

by applying, by scanning, a chamfer mask to the various points of the image; the estimation of distance of a point, by application of the chamfer mask to this point termed the goal point being performed in the distance transform by cataloguing the various paths going from the goal point to the source point and passing through points of the neighbourhood of the goal point which are covered by the chamfer mask and whose distances from the source point have been estimated previously in the course of the same scan, by determining the lengths of the various paths catalogued by summation of the distance assigned to the point of passage of the neighbourhood and of its distance from the goal point, extracted from the chamfer mask, by searching for the shortest path among the paths catalogued and by adopting its length as estimate of the distance of the goal point; a distance value greater than the largest distance measurable on the image being initially allocated, at the start of the scan, to all the points of the image except to the source point, origin of the distance measurements, to which is assigned a zero distance value;

However, contrary to what is usual, in said distance transformation

the paths catalogued during the application of the chamfer mask to a goal point with a view to searching for the shortest path, have their lengths

translated into times of travel for the mobile and those catalogued paths whose times of travel for the mobile are such that the goal point would belong to a prohibited zone of passage at the moment at which the mobile reached it, are excluded from the search for the shortest path.

The rejection of claims 1-4 and 6-10 under 35 U.S.C. 103(a) as being unpatentable over Tran further in view of Zoraster is submitted as being untenable in that the citation/application of Tran (US 5,892,462) is not seen as resulting in a proper rejection inasmuch as this document does not relate to a method for estimating the distances from a mobile, to the points of a map of a terrain over which the mobile is moving. Tran's teachings instead, relates to a ground collision avoidance system and fails to mention or suggests the use of a distance transformation.

Tran discloses a ground collision avoidance system with a flight envelope predicting system operating with a high fidelity aircraft model for predicting the most possible or probable flight paths that will be flown and manoeuvred by the aircraft during a predetermined amount of time. This ground collision avoidance system provides ground collision avoidance warnings by searching the collisions of the most possible probable flight paths with a ground mapping. When a collision condition is detected, the system determines an initiation ground avoidance point (GAP) and displays a different flight path to be initiated at this point to achieve ground avoidance situation. The ground avoidance point is determined on location and time of impact with terrain calculated, forward time, by means of the instantaneous positions and inertial vector status from the aircraft's current positions based on the aircraft parameters (col. 6, lines 35-40).

The ground collision avoidance system of Tran estimates distances of points on predicted flight paths and not of a known point of a map.

Zoraster on the other hand, is such as to describe a method using a distance transformation. However, the distance transformation described by Zoraster is not of the same kind as the distance transformation defined in claim 1 because it is used with a plurality of source points (points with a zero forced estimated distance) for computer contouring that is to say for estimating distances relatively to objects defined by more than one source point and not for estimating distances of points of a map relatively to only one source point.

Moreover, the condition for searching the shortest paths is not dependent on travel times for a mobile placed in proximity of the only one source point. Therefore, the distance transformation described by Zoraster cannot suggest the distance transformation defined in claim 1 and therefore cannot be used in combination with the teachings of Tran for the purposes of leading the hypothetical person of ordinary skill to the claimed subject matter. That is to say, in order to establish a *prima facie* case of obviousness, it is necessary to show that the hypothetical person of ordinary skill would, without any knowledge of the claimed subject matter and without any inventive activity, arrive at the claimed subject matter given the guidance of the cited references when each is fully considered as statutorily required. The person of ordinary skill in the art "thinks along the lines of conventional wisdom in the art and is not one who undertakes to innovate *Standard Oil Co. v American Cyanamid Co.*, 227 USPQ2d 293, 298 (Fed. Cir. 1985)

Accordingly, it is submitted that it would not be obvious for one of ordinary skill in the art of estimating distances from a mobile, to the points of a map of a terrain over which the mobile is moving, to combine the teachings of the computer contouring method of Zoraster and of the ground collision avoidance system of Tran because of the difference of technical domains. Moreover, combining these two teachings, does not result in the method defined in claim 1 using a distance transformation with only one source point and with a condition for searching the shortest paths dependent of times of travel for a mobile placed in proximity of the only one source point.

The rejection of claims 5-11 in light of Tran and Zoraster and further in view of Margolin is not seen as being tenable in that claim 5 and claims 6-11 are directed to two very different subject matter. Claim 5 is directed to the appearance of the displayed map. Claims 6-11 are directed to the scanning of the image constituted by the elements of the terrain elevation database corresponding to the map of the terrain over which the mobile is moving by the chamfer mask of the distance transformation.

Moreover the application of Margolin is not understood because its teaching directed to a digital elevation database compression has nothing to do with the displaying of deviations with the ground of the forecastable altitude of the aircraft or with the scanning of an image by the chamfer mask of a distance transformation. It is therefore submitted that the inclusion of the

teachings of Margolin does nothing to improve the situation and un-muddy the waters which result from any consideration of Tran and Zoraster.

Conclusion

It is respectfully submitted that the claims as they stand before the Patent Office are allowable over the art which has been applied in this Office Action for at least the reasons advanced *supra*. Favorable reconsideration and allowance of this application are courteously solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
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